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Neuroscience and philosophy must work together

Theories of consciousness are challenged by recent research into the impact of brain function on the sense of self

- - - [Barry Smith](#)
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The brain is made up of a series of interlocking systems. Photograph: Sebastian Kaulitzki / Alamy/Alamy

Human beings are part of nature. They are made of flesh and blood, brain and bone; but for much of the time they are also conscious. The puzzling thing is how the intricate sequences of nerve

cells and tissue that make up a person's brain and body can generate the special subjective feel of conscious experience.

Consciousness creates, in each of us, an inner life where we think and feel; a realm where we experience the sights, sounds, feels, tastes and smells that inform us of the world around us.

To many philosophers the central problem of consciousness is, how can the facts of conscious mental life be part of the world of facts described by the natural sciences?

The 17th-century philosopher, [René Descartes](#), thought they couldn't and argued that, in addition to our physical makeup, creatures like us had a non-material mind, or soul, in which thinking took place. For Descartes, only humans were subjects of experience. Animals were mere mechanisms. When they squealed with what we mistakenly took to be pain, it was just air escaping from their lungs.

Today we take other animals to be conscious; although we are not sure how far down the phylogenetic scale consciousness extends. Most problematically of all, if consciousness was immaterial, how could the immaterial soul move the physical body, or feel pain in response to physical injury?

The difficulty of understanding such material-immaterial interactions is the reason most contemporary philosophers reject Descartes' mind-body dualism. Surely it is the brain that is responsible for controlling the body, so it must be the brain that gives rise to consciousness and decision-making. So how does consciousness arise in the brain? Science still has no answer.

To a large extent consciousness has been dethroned from the central role it used to occupy in the study of our mental lives. [Freud](#) persuaded us that there is more going on mentally than we are consciously aware of, and that sometimes others can know more about what we are thinking and feeling than we do. Now we are also learning more and more from [neuroscience](#) and neurobiology about how much of what we do is the result of unconscious processes and mechanisms. And we are discovering that there are different levels of consciousness, different kinds of awareness, and that much of our thinking and decision-making can go on without it. So a more pressing question might be, what is consciousness for? Is it just a mere mental accompaniment to what is going to happen anyway? In that case it may be our sense of self and self-control that is most in need of revision.

It's also worth remembering that the only convincing example of consciousness we have is our own. Are the people around me really conscious in the way I am, or could they be zombies who act like humans?

Conscious awareness is bound up with our sense of self, but our sense of self is bound up with awareness of the body. The sense of agency and ownership of our limbs is very much part of who we are and how we operate in the world. But it can also go missing after brain injury. In rare cases of brain lesion people can experience sensations in their own hand but not think the hand or the experience belongs to them.

Wittgenstein once said that no one could have an experience and wonder whose experience it was. An experience I feel has to be my experience and it is conceptually impossible to think otherwise. However, when something goes awry in the injured brain the conceptually impossible becomes possible for certain patients. So the nature of consciousness and how we experience it depends on the proper functioning of the brain. We can be aware in moving our bodies that it is our own body we are moving, and we may still have a feeling of being the agent of that movement, but it may not be our conscious decisions that initiate those movements.

The sense of ourselves as consciously deciding everything we do is surely an illusion: but a persistent one. Equally, the idea that consciousness is unified and must be that way comes under increasing pressure in contemporary neuroscience. There are levels of consciousness and perhaps splits in conscious awareness. Can we have consciousness and lack awareness of it? Do we always know what our experience is like, and is experience always as it seems? Much recent experimental evidence from neuroscience suggests that this may not be the case. So it is a fruitful time for philosophers and neuroscientists to work together, to revise previous models and provide new accounts of how we perceive things and why our experience patterns in the way it does.

There may be no single answer to what consciousness is, but we may still be able to find ways to explain what is going on in the brain. This would help resolve why our conscious experience takes the shape and form it does, and elucidate what happens to consciousness when one of the interacting systems that make possible the self-knowing mind breaks down. These phenomena provide vital clues about the [neural correlates of consciousness](#) and are a step on the road to understanding why things work as they do.

Getting at the elusive nature of our own experience and freeing ourselves from faulty interpretations is a tricky business. Many disciplines are needed if we are to make a real breakthrough.

- Professor Barry Smith will take part in a panel discussion, organised by the Guardian, on the nature of consciousness – and whether science will ever be able to explain it – at the [Royal Institution](#) in London on Wednesday at 7pm
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